



**NOAA Teacher at Sea
Nicolle Vonderheyde
Onboard NOAA Ship *Pisces*
June 14 – July 2, 2010**

Nicolle von der Heyde

NOAA Ship *Pisces*

Mission: SEAMAP Reef Fish Survey

Geographical Area of Cruise: Gulf of Mexico

Dates: Monday, June 21

Weather Data from the Bridge

Time: 0800 hours (8 am)

Position: Latitude: 28° 09.6 minutes N

Longitude: 094° 18.2 min. W

Visibility: 10 nautical miles

Wind Direction: variable

Water Temperature: 30.6 degrees Celsius

Air Temperature: 27.5 degrees Celsius

Ship's Speed: 5 knots

Science Technology Log

Atlantic Spotted dolphins are the graceful ballerinas of the sea. They are just incredible! The Gulf of Mexico is one of the habitats of the dolphin because they live in warm tropical waters. The body of a spotted dolphin is covered with spots and as they get older their spots become greater in number.





Here you can see the spots on an older Atlantic Spotted Dolphin. To read more about dolphins go to <http://www.dolphindreamteam.com/dolphins/dolphins.html>

Because Dolphins are mammals they breathe air through a single blowhole much like whales. Dolphins live together in pods and can grow to be 8 feet long and weigh 200-255 pounds. Like whales, dolphins swim by moving their **tails (flukes)** up and down. The dolphin's beak is long and slim and its lips and the tip of its beak are white. They eat a variety of fish and squid found at the surface of the water. Since dolphins like to swim with yellow fin tuna, some dolphins die by getting tangled in the nets of tuna fishermen.

Newborn calves are grey with white bellies. They do not have spots. Calves mature around the age of 6-8 years or when the dolphin reaches a length of 6.5 feet. Calving takes place every two years. Gestation (or pregnancy) lasts for 11 1/2 months and babies are nursed for 11 months.

While watching the dolphins ride the bow wave, Nicolle and I wondered, "How do dolphins sleep and not drown?" Actually, we found that there are two basic methods of sleeping: they float and rest vertically or horizontally at the surface of the water. The other method is sleeping while swimming slowly next to another dolphin. Dolphins shut down half of their brains and close the opposite eye. That lets the other half of the brain stay "awake." This way they can rest and also watch for predators. After two hours they reverse this process. This pattern of sleep is called "**cat-napping.**"

Dolphins maintain a deeper sleep at night and usually only sleep for two hours at a time. This method is called "**logging**" because in this state dolphins look like a log floating in the ocean.

The 1972 **Marine Mammal Protection Act (MMPA)** prohibits the hunting, capturing, killing or collecting of marine mammals without a proper permit. Permits are granted for the Spotted Dolphins to be taken if it is for scientific research, public display, conservation, or in the case of a dolphin stranding. The maximum fine for violating the MMPA is \$20,000 and one year in jail.

Personal Log

The best part of this trip is all the marine life I see in the Gulf. In the past few days, dolphins have been swimming up to the boat and riding the bow wave of the ship. They are so graceful and playful in the water. In addition



to the Tiger Shark seen feasting on the dead Sperm Whale, I have seen quite a few sharks swimming in the water near our ship. One, called a **Silky Shark**, took the bait as some of the crew was fishing from the stern of the boat (shown to the left). It was hauled up so the hook could be taken out and released back into the water. The second was a baby shark swimming near the bow of the ship as I watched the dolphins in the distance. I also saw a shark swimming near the starboard side of our ship while the deckhands were hauling up one of the camera arrays.

The fourth shark was the most exciting. As the crew was working at the stern of the ship to release a line that was caught in the rudder, I looked over the stern to see a large shark very near the surface swimming toward the starboard (right) side of the ship. I hurried to look and to my surprise it was a giant **Hammerhead!** I never expected to see one of these in its natural habitat. Unfortunately, by the time I got my camera out, the Hammerhead was too far away and too deep to get a clear shot, but what a sight to see!



I often mistake the fish shown on the left for sharks. Actually they are **Cobia**, also known as Lemonfish. Once in a while these fish approach the boat as we are hauling fish up on the bandit reel. I have also seen box jellyfish in the water as we are working on the starboard side of the ship and I spotted a brief glimpse of an **Ocean Sunfish** (*Mola mola*) from the bridge of the ship as I was talking to our Commanding Officer (CO). I wish I could have seen this fish up close. They are the largest bony fish in the oceans and as someone on the ship described, they resemble a giant Chiclet swimming in the water.

The photo on the right is from Monterey Bay Aquarium. For more information, go to

<http://www.montereybayaquarium.org/animals/AnimalDetails.aspx?enc=C53nR+hhcrXgfKW+bt/MWA==>



The smallest living things I have seen while at sea are the tiny creatures that live in the Sargassum, a type of seaweed that floats freely within and on the surface of the Gulf waters. The Sargassum provides a habitat for tiny creatures that are the foundation of the food web, even providing food for some of the largest animals in the sea like whales. The picture below on the

left shows a giant patch of Sargassum, while the picture on the right shows some of the creatures that live within it including tiny shrimp, krill, and very small crabs.



Seeing all this life has been reassuring as the oil continues to gush into Gulf waters off the coast of Louisiana, however I can't help but think what the overall impact of this spill will be for the future of the Gulf. Will we see the negative environmental impact spread to the Eastern Gulf? Are microscopic droplets of oil and chemical dispersants infecting the food chain beyond the area that we visibly see being impacted? These questions will be answered as NOAA scientists continue to collect and analyze the type of data that I am helping gather on this SEAMAP Reef Fish Survey. I feel so fortunate to be a part of this scientific endeavor.

Animals Seen

Silky Shark (*Carcharhinus falciformis*)

Hammerhead (*Sphyrna mokarran*)

Cobia (*Rachycentron canadum*)

Ocean Sunfish (*Mola mola*)

Krill, Shrimp, Crab (species unidentified)